



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,414	07/13/2006	Yuji Miki	05632/LH	8306
1933 7590 12/12/2007 FRISHAUF, HOLTZ, GOODMAN & CHICK, PC 220 Fifth Avenue 16TH Floor NEW YORK, NY 10001-7708			EXAMINER LIN, KUANG Y	
			ART UNIT 1793	PAPER NUMBER
			MAIL DATE 12/12/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/552,414	MIKI ET AL.	
	Examiner	Art Unit	
	Kuang Y. Lin	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/7/05, 7/13/06 & 3/14/07.</u> | 6) <input type="checkbox"/> Other: ____ |

1. The specification is objected to under 35 USC 112, first paragraph in that in page 33, lines 7-9, it states that a "pair of magnet poles 28 of the static magnetic field generators 30 are disposed at the wide face sides of the mold 10 with the mold 10 therebetween". However, in figure 20, the pole 28 belongs to the traveling magnetic field generator 20 rather than the static magnetic field generators 30. Correction or explanation is required.

2. Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

These claims are written in a narrative format rather than an objective format and thereby they do not positively and directly include all the process steps which are referred thereto. Further, in claim 1, it is not clear which direction is the longitudinal direction of the mold. It is suggested to insert a phrase "wherein the longitudinal direction of the mold is a direction along the wide face of the mold" to overcome the rejection.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-3, 8-10, 20, 21, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 972,591.

EP '591 shows a continuous casting method in which the molten metal is vibrated by a shifting magnetic field generated by the electromagnetic coil so that the molten metal is alternately given a high intensity and a low intensity acceleration. Although EP '591 does not show that the peak position of the vibrating magnetic fields are shifted, its magnetic fields are alternately reversed such that the molten metal alternately flow in one direction and in the opposite direction (see, for example, [0011]). The process of producing the vibrating magnetic field in the EP '591 appears to be the same as that of instant application (see, for example, page 11, second paragraph of the instant application). Thus, it is expected that in EP '591 the peak position of the vibrating magnetic field will also be shifted along the longitudinal direction of the

continuous casting mold. With respect to claims 2, it would have been obvious for those of ordinary skill in the electromagnetic art to arrange the magnetic pole phase such that to obtain an optimal vibrating magnetic field. With respect to claims 3 and 10, it is conventional to superimpose a static magnetic field on an alternative magnetic field as acknowledged by applicant in pages 3+ of the specification. With respect to claims 8, 9, 20, 21, 24 and 25, it would have been obvious to obtain the optimal process parameters through routine experimentation.

6. Claims 4-7, 11-19, 22, 23, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 972,591 as applied to claim 1 above, and further in view of US 6,117,389 to Nabeshima et al.

Nabeshima et al. show a low carbon steel for continuous casting process. The steel composition is the same as that of instant application. It would have been obvious to cast the low carbon steel of Nabeshima et al. in the process of EP '591 if the cast strand of that low carbon steel composition is designated. With respect to claims 22, 23, 26 and 27, it would have been obvious to obtain the optimal process parameters through routine experimentation.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(f) he did not himself invent the subject matter sought to be patented.

8. Claims 1-27 are rejected under 35 U.S.C. 102(f) because the applicant did not invent the claimed subject matter.

In each of JP 2004-58,092, JP 2003-103,348 and JP 2003-103349, the disclosure of each of the references shows the claimed invention. It is noted that the inventorship of each of those references are different from that of instant application and the filing dates in those JP applications are earlier than the priority date of instant application. Thus, it is assumed that the inventors of those JP references are true inventors of the claimed invention.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuang Y. Lin whose telephone number is 571-272-1179. The examiner can normally be reached on Monday-Friday, 10:00-6:30,.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jonathan J. Johnson can be reached on 571-272-1177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:
10/552,414
Art Unit: 1793

Page 6

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kuang Y. Lin/
Primary Examiner
Art Unit 1793

12-07-07